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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/711,541	11/13/2000	Masaharu Ito	YKM-00901	7142

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EXAMINER	
CATHEY, DAMIAN E	
ART UNIT	PAPER NUMBER
2817	

DATE MAILED: 05/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/711,541	Applicant(s) ITO ET AL.	
	Examiner Damian E. Cathey	Art Unit 2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-13 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-13 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 13 November 2000 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "strip-like" renders the claim indefinite because it is not clear how structures other than strips are "strip-like". Appropriate correction is necessary.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art, figures 8-11 and description thereof, cited in the application in view of Kitazawa et al. U.S. Patent No. 6,057,600.

Referring to claim 1, the admitted prior art (Figs. 8 and 9) discloses an RF package having first and second dielectric substrates, 1a and 1b, and a cavity, 3 where a semiconductor element, 2, is mounted. The prior art further discloses a feed-through, 4, comprised of a coplanar line, 4a, formed on the substrate, 1a, and an inner layer, 4b, wherein the coplanar line, 4a, and the inner layer, 4b, share a strip signal conductor, 5 (which is assumed to meet "strip-like").

Claim 1 states that the RF package includes metal members formed at a connection interface between the coplanar line and the inner layer, on two sides of the signal conductor, which is not disclosed by the admitted prior art.

Kitazawa et al. disclose (Fig. 9) an RF package including metal members, 33a and 33b (See Kitazawa et al. Col. 9, line 57) formed at a connection interface between the line, 25a, and an inner layer, on two sides of the signal conductor, 25a. Kitazawa et al. further disclose that by connecting the ground layers through the shortest conducting

passage, reflection losses can be effectively increased, and that the design serves to improve transmission characteristics (See Kitazawa et al. Col. 10, line 11).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have further modified the RF package of the prior art cited in the application to incorporate metal members formed at a connection interface between the coplanar line and the inner layer, on two sides of the signal conductor, as taught by Kitazawa et al.

The above modification would have been obvious as an advantageous benefit reducing reflection losses, and improving transmission characteristics, as explicitly taught by Kitazawa et al.

Referring to claim 2, the prior art cited in the application discloses (Figs. 8 and 9) an RF package including a first ground conductor, 6b, on the upper surface of dielectric layer, 1a, a second ground conductor, 6c, on the dielectric substrate, 1b, and a plurality of through-holes, 8b, formed in the dielectric layer, 1b, to connect the first and second ground conductors, 6b and 6c.

In reference to claims 3-5, and 7, Kitazawa et al. disclose (Fig. 2) an RF package having a long side, L (which corresponds to the distance or pitch, λ, between a connection interface between the line and the first via holes) that corresponds to one-half the wavelength of the transmission signals. The formula, $\lambda = cf$, is well known in the art and Kitazawa et al. do figure dielectric constant and dielectric loss into the formula for design of the RF packages (See Kitazawa et al. Cols. 11 and 12), and it is well known to form the pitch at a distance corresponding to one-half the wavelength of

the transmission signals in order to prevent emission, thereby rendering the claims obvious.

Referring to claim 6, the prior art cited in the application discloses (Figs. 8 and 9) an RF package including a third ground conductor, 6a, formed on a lower surface of dielectric substrate, 1a, and second via holes, 8a, in the substrate, 1a, arranged on two sides of the signal conductor, 5.

In reference to claim 8, due to the combination of the prior art cited in the application, and Kitazawa et al, the modification to the prior art package would constitute metal members, 33a and 33b, having ends on sides of a signal conductor, 5, aligned with ends of via holes, 8a, on the side of the signal conductor, 5.

Referring to claim 9, the prior art cited in the application in combination with Kitazawa et al. (Figs. 8 and 9) would contain metal members, 33a and 33b, connecting first and second ground conductors, 6b and 6c, to each other at a connection interface between the coplanar line, 4a, and the inner layer line, 4b.

In reference to claims 10-12, the Kitazawa et al. disclose (Fig. 9) that the metal members are semi-cylindrical metal electrodes, and in regards to claims 10 and 12 stating that the metal members are metal posts and metal plates, it would be obvious to substitute either of these ground conducting means for each other, and would be considered a substitution of art-recognized equivalent means of providing a connection to ground.

Referring to claim 13, the prior art cited by the application is silent as to the type of ceramics used to form the dielectric substrates, 1a and 1b.

Claim 13 states that the dielectric substrates are formed of co-fired ceramics.

Kitazawa et al. disclose that the dielectric substrates are formed of co-fired ceramics (See Kitazawa Col. 11, line 16).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have formed the substrates of the prior art cited in the application to be formed of co-fired ceramics, as taught by Kitazawa.

The above substitution would have been considered obvious since it is held that when prior art is silent or suggests a generic method, material, etc. any specific method, material, etc. would suffice, thereby rendering the claim obvious.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,215,377 to Douriet is cited with respect to RF packages and through-hole technology.

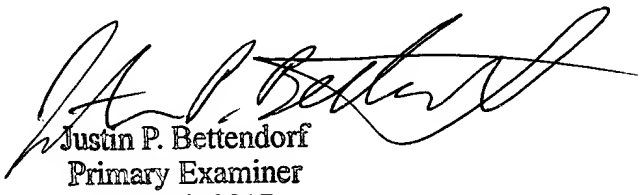
U.S. Patent No. 5,852,391 to Watanabe et al. is cited with respect to RF packages and through-hole technology.

U.S. Patent No. 5,929,728 to Barnett et al. is cited with respect to pitch formations involving half-wavelengths.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Damian E. Cathey whose telephone number is 703-305-1631. The examiner can normally be reached on 7:00 - 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bob Pascal can be reached on 703-308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7266 for regular communications and 703-305-0142 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Justin P. Bettendorf
Primary Examiner
Art Unit 2817

dc
May 23, 2002